

NATIONAL

By Dina Matar

Special to the Jordan Times

AMMAN — The pollution of the Zarqa River, the Wadi Shita, the Wadi Seer and the Seil-Hisban waters has reached a dangerous degree, according to research carried out at the Geology and Mineralogy Department of the University of Jordan.

The research, conducted by professors Elias Salameh and Klaus Bandel indicated that, in some areas, the waters were badly polluted and completely unsuitable for agricultural purposes, let alone domestic ones.

What makes the research unique is that it puts emphasis on both the hydrobiological and hydrochemical aspects of the pollution of surface water, especially in the Zarqa River.

Results of the research also showed that although the degree of the pollution varied from one area to another, "there is a possibility that the quality of the waters would deteriorate, if no suitable measures are undertaken to limit pollution sources."

The field work, carried out by the two professors, constituted a major part of the study. Dr. Salameh says: "It took us four complete months just to collect daily samples and test them."

Still, follow-up studies should be conducted to determine the degree of pollution now, since the research was conducted about 18 months ago.

The degree of the pollution was determined by the chemical characteristics of the waters, which in turn were determined by the presence of macroorganisms in the waters.

"Some macroorganisms live in different grades of polluted

Growing pollution a threat to water use in the home

water," Dr. Salameh told the Jordan Times. "These macrofauna—as they are scientifically called—helped us grade the degree of the pollution in each area we tested."

The grades of the pollution were divided into ten, each classified according to the macroorganism found there. "Grade one is the least polluted and grade ten the most," Dr. Salameh explained.

In some areas, like the

Amman-Zarqa water basin, the waters were found to be severely polluted. About 90 per cent of Jordan's industry is located in that region, and the real dangers to the waters stem from the increasing amount of pollutants, especially minerals and organic waste dumped into the river.

What is more, the Amman sewage treatment plant also deposits its waste near the waters, and the effluent flow of the plant which contains a high concentration of

nitrates increases the amount of the pollution.

According to the research, some samples of water collected near the sewage plant contained certain macroorganisms that only live in cesspools. "On the other hand," Dr. Salameh said, "the effluent flow from the plant has been forming huge amounts of foam on the water surfaces, resulting from the large quantities of detergents and chemicals used for treating the waste before discharging it."

Dr. Salameh said, "the increasing concentration of nitrates, phosphates, and ammonia are causing eutrophication of the water." He explained that this leads to the over-production of algal blooms and other water plants, some of which could excrete material toxic to livestock and human beings.

According to the study, the eutrophication process has already left its imprints on the ecosystem.

In some areas, no fish were found, while in others the pollutants could be clearly seen on the surface.

A hundred metres downstream from the Amman sewage plant the waters—receive the effluent from the plant—have a strong sewage odour, their surface is covered with a thin layer of oil, and the ecosystem has completely collapsed, the research indicated.

The treatment plant however, is not the only source of pollution to the Zarqa River waters. Industrial plants, which have been increasing in number over the past few years, also dump their waste into the river without any treatment at all.

Near some industries the waters of the river have become turbid, and algal blooms—which grow due to eutrophication of the water—can be detected clearly near the river banks. Dr. Salameh said.

"Of all the studies carried out before, this research is unique," he said, "since it is a detailed study

of the surface waters of the region with regard to their hydrobiological and hydrochemical properties."

He added that the study was first carried out to compare the geologic and topographic conditions between the areas, west of Amman like Wadi Hisban and Wadi Seer, and the Amman Zarqa area.

"What surprised us was that the geological aspects were the same," Dr. Salameh said. "But, the degree of pollution increased with increasing urbanisation." We could actually know which waters were more heavily polluted just by looking at the surface and detecting the macroorganisms there," he said.

As to chemical pollution, it was found that the rock springs of Wadi Shita, west of Amman were not polluted, and could be used as a potential source of drinking water. But, with increasing agricultural activities, urbanisation and industrialisation, the quality of the water differed—more polluted waters were classified as grade two or three, Dr. Salameh said.

In the Wadi Seer area, the waters were found to be chemically polluted. The pollutants are mainly coming from the hospital there, the research indicated.

However, the worst chemically-polluted waters were found in the Zarqa River, where the pollution was more chemical than biological, with high concentrations of nitrates, chloride, and sodium ions traced there.

Dr. Salameh said, "the problem is that the chemical pollution has not been improving over the years, even with the additional amount of water coming from nearby springs or creeks, and during floods all waste accumulations and finer sediments are washed into the King Talal Dam, whose waters have consequently become polluted."

The research showed that the pollution is actually becoming a major problem, and unless suitable measures are undertaken by the government and people, continuous urbanisation, random housing and increasing industrialisation would add to its momentum. Dr. Salameh and Dr. Bandel in their research urged that some quick solutions be found, before the problem becomes too difficult to handle.

Dr. Salameh says, "Now that the Zarqa waters are highly polluted, springs that come directly or indi-

rectly from them should not be used for drinking purposes." He also recommended that no more cesspools be constructed at random, and that each industry treat its effluent flow before discharging it into the river. The government has already issued orders requiring all industries on the river to install effluent treatment plants by the end of this year.

Dr. Salameh said, "The government should build protective zones around heavily polluted waters, so people would keep away, and not use the water for drinking or other domestic purposes." He added that the waters of the King Talal Dam reservoir should not be used for drinking purposes, since these are undoubtedly polluted. But, what is the most important recommendation of all, is that the government should become more aware of the pollution problem. "What we have to do now is to protect other sources of water from pollution, and try to curb industries and tighten our grip on them, otherwise we will end up with a situation where we will find no spring water to drink," Dr. Salameh concluded.



Thick foam from the Amman sewage treatment plant forming huge amounts of foam on the surface of the Zarqa River

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JORDAN TIMES DAILY GUIDE

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مكتبة الامم

ulsi to IMF

Sept. 25 (Petra) — Bank Governor Moham... Nabulsi left for on today to attend the meetings of the Inter-Monetary Fund (IMF) World Bank. Dr. Nabulsi attend an IMF committee...

ners due Spain visit

Sept. 25 (Petra) — A representing Jordanian breeders will leave for tomorrow on a week-long members will look into methods of raising and sheep for the market...

Two murderers hanged at Mahatta

AMMAN, Sept. 25 (J.T.) — Two convicted murderers — Isma'il A'raj, 24 and Abdullah Al Qaddoumi, 38 — were hanged at Mahatta corrective centre here...

Foreign consortium to study construction of cable factory

AMMAN, Sept. 25 (J.T.) — A consortium of the British firms Peat and Marwick and Mitchel, and the Japanese company Hitachi, will conduct a feasibility study on the construction of a plant in Jordan to manufacture electric and telephone cables...

early yesterday for killing three people. A story in the local press said that A'raj, in complicity with another criminal named Ghazi Al...

Raise your voice--YWCA choir is seeking members

AMMAN, Sept. 25 (J.T.) — The YWCA of Amman is sponsoring a choir composed of a small group of enthusiastic amateur singers that meets weekly at the YWCA hall...

Tayyeb, had first killed a Saudi national along the Wadi Seer road, believing he was carrying a lot of cash, but were disappointed to find only a little money. The two later committed a major burglary at Jabal Amman, the report said, but later quarrelled over the loot, and A'raj killed Tayyeb.

The other condemned murderer, Qaddoumi, had killed his cousin, whom the report described as paralysed. It said Qaddoumi had met his cousin near Azraq soon after the latter's return from Kuwait, and killed him with the intention of robbing his money. Qaddoumi later admitted that he found only a little cash on the victim, the report said.

Jerash festival panel meets

AMMAN, Sept. 25 (Petra) — Her Majesty Queen Noor yesterday chaired a meeting at the Yarmouk University liaison office in Amman to review preparations for the Jerash festival to open on Oct. 21. Attending were members of the festival committee, Yarmouk University President Adnan Badran and representatives of private and public sectors taking part in the festival.

JD 8m in funds for Jerash restoration announced at forum

JERASH, Sept. 25 (Petra) — The government has allocated JD 8.25 million for the restoration of the ancient Roman city of Jerash under the upcoming five-year economic plan for 1981-85, Prime Minister Mudar Badran announced here yesterday. Mr. Badran was speaking at an open cabinet meeting with Jerash citizens held at the Jerash Chamber of Commerce headquarters, during which he heard requests from the Jerash District governor and leading figures for improved public services in the district.

to mosques: JD 10,000 to the Gaza refugee camp, and JD 10,000 to Souf refugee camp. The money will finance projects to improve public services, and other activities in the district, the prime minister said.

He also announced that the government is allocating JD 35,000 for the restoration of the ancient Roman market in Jerash.

The Jerash District Governor Fayed Al'Abbadisubmitted to the cabinet a working paper which contained in detail all the requests of villages and towns in the district for improved health, educational and other public services, and roads, communications and other facilities. After hearing speakers' views and requests, several ministers spoke in reply.

Education Minister Sa'id Al Tal said that his ministry has plans to open an engineering technical institute in Jerash District to accommodate 720 trainees. The ministry will also build three secondary and five preparatory schools in the coming five years, Dr. Tal said. At present Jerash District has 100 schools, offering education to 18,000 students, the minister added.

Minister of Communications Mohammad Adkoub Al Zaben said that his ministry will supply

the district with another semi-automated telephone exchanges. Nearly 35 villages in Jerash District will benefit from the national communications project for rural regions, the minister added.

Also addressing the meeting was Minister of Social Development Ibrahim Al Mufti, who spoke about her ministry's project to establish a centre in Jerash to manufacture traditional handicraft products. This centre will start production by early next year, she said. She called on private and public institutions to offer further aid and services to handicapped people.

Minister of Municipal and Rural Affairs and the Environment Hassan Al Momani said that his ministry has sufficient funds to other municipalities in the Jerash district further loans. He also announced the prime minister's approval of the establishment of a municipality in the town of Burma.

Dust poses danger: Amman, Sept. 25 (Petra) — The Public Security Directorate today warned drivers, particularly on major desert roads, to take extreme caution due to poor visibility caused by sandstorms that have hit Jordan.

Jordanian Night revives traditions

Dina Matar to the Jordan Times Sept. 25 — A "Jordanian Night" organised at the Intercontinental Hotel tonight was one hundred percent Jordanian — except for the guests.

promote Jordanian customs, culture and lifestyle to non-Jordanians. Organisers of the party night thought that this presentation of Jordanian life to their guests would be the best way of keeping the true nature of the country and its people in mind. The night was organised in honour of Intercontinental Middle East directors, who have been meeting here in Jordan. "Instead of throwing a gala dinner, as was usual, we thought that a Jordanian Night would be the best way of presenting Jordan and its people as they really are," Miss Lucie Astou, public relations manager at the hotel, told the Jordan Times.

and another helping of tamar hindi, a typical drink in the Jordanian household. But when the guests smacked their lips in appreciation, the attendant laughingly told them to hold their breath and wait for the next Jordanian treat of the night — the mansaf — prepared and served right in front of the guests. The waiters added to the nostalgic atmosphere of the night as they moved around in their flowing bedouin dress and matching hausa. But the main attraction was the sight of two bedouins, a man and a woman. The man was meticulously carving pieces of olive wood, turning the lifeless lumps into life-like depictions of the Jordanian environment. As the guests gathered around him to admire his models he skillfully went on to turn out even more camels, horses and palm trees.

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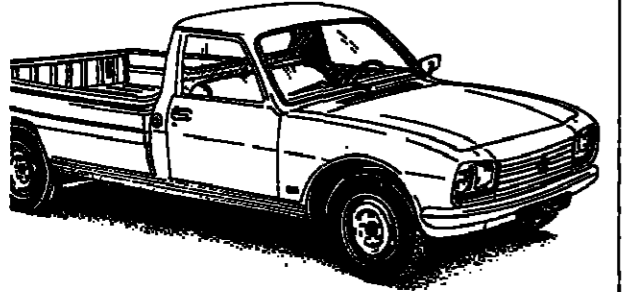
WHAT'S GOING ON

- Film: French Cultural Centre presents a film, 'Les Grandes Evres,' at 7.30 p.m. Painting exhibitions: Dibeh F. Al Qadi, at the British Council. Aliana Seraphim, at the Jordan National Gallery, Jabal Deh.

ARE YOU...

...a play? Putting on a concert? Delivering a message? Organising any non-profit activity open to the public? You have any kind of event to announce to the 'Times' readers? The What's Going On listing is open to receive entries, preferably written ones, in English or Arabic... free of charge. Entries should be received at the Jordan Times by hand or by mail, at least 24 hours before the event. Let us know!

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Heading for an alliance with Moscow

By Eric Rouleau

TRIPOLI — Col. Muammar Qadhafi of Libya decided last week to abandon his policy of "positive neutralism" and move towards an alliance with Moscow.

The decision was taken at the highest level. Col. Qadhafi, his closest aides and the service chiefs, agreed that Libya should propose to sign a joint defence and friendship treaty with the USSR.

It is interesting that Mr. Sadat has moved swiftly against specific groups — Moslem and Christian leaders, students, and journalists and writers.

Creating a police force for the universities of Egypt is a sad comment on how far Egyptian civilisation has regressed recently.

Dialogue

THE CONTINUING crackdown in Egypt against "opponents" of the regime of President Anwar Sadat has now moved into the universities in a major way.

It is evading the point for Mr. Sadat or anyone else in a similar position to claim that a few "extremists" are stirring up trouble in an otherwise happy population.

Clarifying France's M.E. policy

ARAB PRESS COMMENTARY

Clarifying France's M.E. policy

AL RA'Y Perhaps the most significant aspect of French President Francois Mitterrand's statement at his press conference in Paris yesterday was that part clarifying France's Middle East policy.

Of course the Arabs welcome France's one-faced policy and above all France's support for the Palestinian people's rights, which in the light of Mitterrand's statement, is not a tactical move just to please the Arabs but constitutes a basic French stand.

AL DUSTOUR: President Mitterrand's statement yesterday on the Middle East contains frank and specific views which we regard as a constructive development in France's stand.

President Mitterrand's statement leads us to believe that the establishment of an independent Palestinian state is a basic element in France's concept of a just and comprehensive Middle East peace.

We hope that in his talks in Riyadh, President Mitterrand will put his words into deeds and will work out with Saudi Leaders an equitable formula to bring about a genuine peace.



his country. He claimed to have documents showing that NATO member-states and a few African countries had been asked by the U.S. to boycott Libya or, at least, cut back their trade with it.

Even more serious, he told the Lebanese Communist leader, was the fact that the U.S. had considerably reduced its imports of Libyan crude.

Washington's prime aim is quite clearly the neutralisation of what it considers to be the hotbed of terrorism — Libya.

It was indeed an impressive roll-call of representatives of states and movements who on September 1 attended the celebrations marking the anniversary of the Libyan revolution.

The Libyan leader told Haoui that the U.S. had already installed bases in two neighbouring countries — Egypt and Sudan — which were massing troops along their borders with Libya and Chad respectively.

Qadhafi and Haoui, the latter made a strange proposal: the conclusion of a defence treaty with the Marxist governments of the South Yemen and Ethiopian republics, both of which he said were "encircled" by U.S. bases.

Accompanied by Tayssir-Qubaa, a leader of the Popular Front for the Liberation of Palestine (PFLP) and occasionally by the South Yemeni head of state, Mohamed Ali Nasser, Haoui began shuffling back and forth between Tripoli, Aden, and Addis Ababa in great secrecy.

In the Libyan leader's view: though, the tripartite treaty was no "comprehensive insurance".

As for the Libyan leader's attempts to detach Europe from the United States, the view fairly widely held in Tripoli's diplomatic circuit is that they were ham-handed, to say the least.

bases on the shores of the Mediterranean and inflict a "nuclear disaster" on Europe, amused informed observers far more than it irritated them.

Whatever the outcome of Tripoli's diplomatic wooing of Europe and the Arab and African world, Col. Qadhafi has manifestly decided to put himself, if not squarely within, at least alongside the socialist side which in his view offers the best guarantee of the Libyan regime's continued survival.

The oblique overtures to France were less clumsy. Qadhafi uttered not a word of criticism against France in his September 1 speech.

Nevertheless, Qadhafi isn't budging on the Chad issue which, coming after the ransacking of the French embassy in Tripoli, has added to the tension between France and Libya.

The Libyan leader's views don't seem to be shared by the main party concerned, Goukouni Oueddei, head of Chad's transitional government of national union, who will be meeting French government officials in a couple of weeks.

— Le Monde

BUSINESS HORIZON

Are our expatriates on the giving or the receiving end?

By Fahed Fanek

JORDANIANS working abroad in both Arab and non-Arab countries number about 250,000.

It is being said for instance that our expatriates contributed around \$1 billion to their mother country during 1980.

To be frank and objective with our expatriates, I have to face them with a bitter fact (even at the expense of my popularity with them).

The Jordanian economy today is in bad need of more manpower to join the development effort, especially professionals, administrators and technicians.

The financial transfers that are repeatedly mentioned are not to support the national economy, which the expatriates abandoned, but simply

to feed and accommodate their own families who were left behind to benefit from the public services rendered to them in Jordan.

On the other hand it is estimated that 80 per cent of the expatriate transfer goes to finance imports especially consumer commodities.

Some commentators are fond of suggesting the creation of even more institutions and a new public corporation to take care of our expatriates as a way of acknowledging to their significance in supporting the economy.

Jordan, the small country with very limited resources, undertakes educating and training its generations, at the highest financial and social cost.

Until when can Jordan go on doing this?

The Polish 'revolution' rolls on

Foreigners fear that Solidarity may lose all it has gained if it presses its demands too vigorously, but Leslie Colitt rarely heard that view expressed during his recent visit to Poland.

THE FIRST PHASE of the Russian revolution was over in seven months, but the Polish revolution is in its 13th month and still gaining momentum.

The leaders of Solidarity may indeed be weary after endless presidium meetings and races across Poland to urge moderation on yet another militant regional chapter.

Until now Solidarity knew it could topple the Polish government at any time, but in return for a grudging government licence to operate it chose not to do so.

This is the background against which Solidarity's first congress in Gdansk has been taking place, at the most critical juncture in the short history of the union.

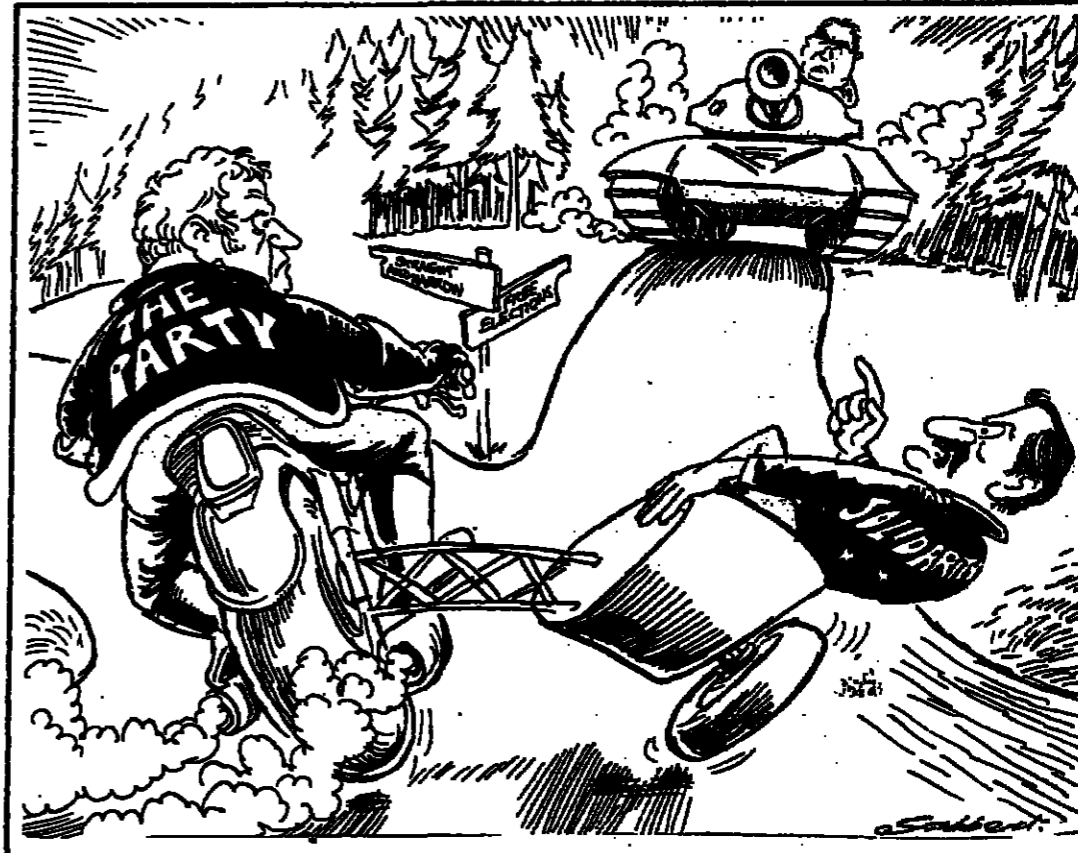
Westerners view Solidarity as an organism with the same discipline as the Communist Party. They think it comes from a plan in Wales's head.

He compares the current situation of Solidarity with that of the moderate Girondists after the French Revolution.

Does this mean that it is inevitable that Solidarity's militants will take over the movement? Mr. Kluczynski thinks not but fears that if the authority of both the government and Solidarity were to be fatally undermined, then the "Jacobins will dominate Solidarity."

The Polish Communist Party has its hardliners and Solidarity's militants. Mr. Stefan Olszowski, a leading hardline party Politburo member, controls the mass media.

Control over the mass media is an essential of Communist rule. With several dozen weekly Solidarity newspapers and publications presenting the non-party view, the Polish leadership's control of television and radio represents one of the last bastions of party influence in Poland.



"Oh yeah, you know a more scenic route further on? I've heard that one before!"

acquiescence of the Soviet Union. The Polish military, it is argued, has always been regarded as a patriotic force in Poland.

Dr. Bronislaw Geremek, one of Mr. Walesa's closest advisers, does not believe however the Polish army "has the men to carry out a coup d'etat" in support of the party.

There are those in Poland who believe that if Mr. Kania does not continue to go along with Solidarity as a reluctant reformer he will not survive this coming winter.

and three of the most revealing ones are within 100 yards of each other in the centre of Warsaw.

Throughout the day and into the night a steady stream of Poles of all ages stop to place a bouquet on the large cross of flowers to the late Cardinal Stefan Wyszynski in the middle of Victory Square.

The inscription "Prawda" (truth) at the base of one statue however, has been given a jolt, ing. The truth, more than anything else, is what Poland has been seeking.

Poland remains a land of images.

Financial Times news features

مكتبة الامم المتحدة

The hundred-million-dollar arm

INGTON — the U.S. space Columbia on its second soon, it will n its cargo bay traordinary equipment — a re robot arm d and built by ans.

is one of the more con- examples of inter- operation in the space ogramme — another pecolab undertaken by an space agency that ried into orbit by the he arm, named the is a complex of and electronic equip- t took hundreds of and technicians five sign and build, at a cost ilion.

arm will be given to the ates in exchange for ccess to use of the shur- adian projects in the ditional ones will be 5 million each.

is designed to unfold. rgo bay, once the shut- rit, and deploy objects ellites outside the ship. retrieve objects that e in orbit, or slide it parts into orbiting

ch an arm, astronauts : to avoid the difficulty : of donning spacesuits outside the shuttle to e numerous tasks to be during working flights re.

adarm has the same design as its human t. The base of the , is anchored in the art of the cargo bay, from two shoulder upper-arm shaft that ngle-jointed "elbow," haft extends from, the three-jointed om which extends a "end effector," to use

the language of the engineers.

The analogy with the human arm does not end here. There is a "skin" or a coating of thermal blankets to protect against extreme temperatures. The bones that link the joints are tubes made of lightweight carbon composite material. Muscle power is provided by small electric motors — with six located in each joint.

The kinesthetic sense, by which humans can tell where a limb is and its function without looking, is provided by electric sensors and tachometers that measure joint angles and rates of rotation. A complex wiring system spreads through the arm, just as nerves spread through a human arm. The wiring network feeds information to an electronic "brain," a computer.

Movement of the arm is directed by an astronaut, with movement of the six joints coor-

wiring network, computes the rates of rotation required at each joint to produce the commanded result and adjusts the speed of each accordingly. The arm can also function as a completely autonomous robot, following a trajectory stored in its memory or guiding itself to a point specified by the operator.

Two television cameras are mounted on the arm, one on the hand and one on the elbow, to permit the operator to monitor the movement of the device on television screens as well as through the windows of the shuttle.

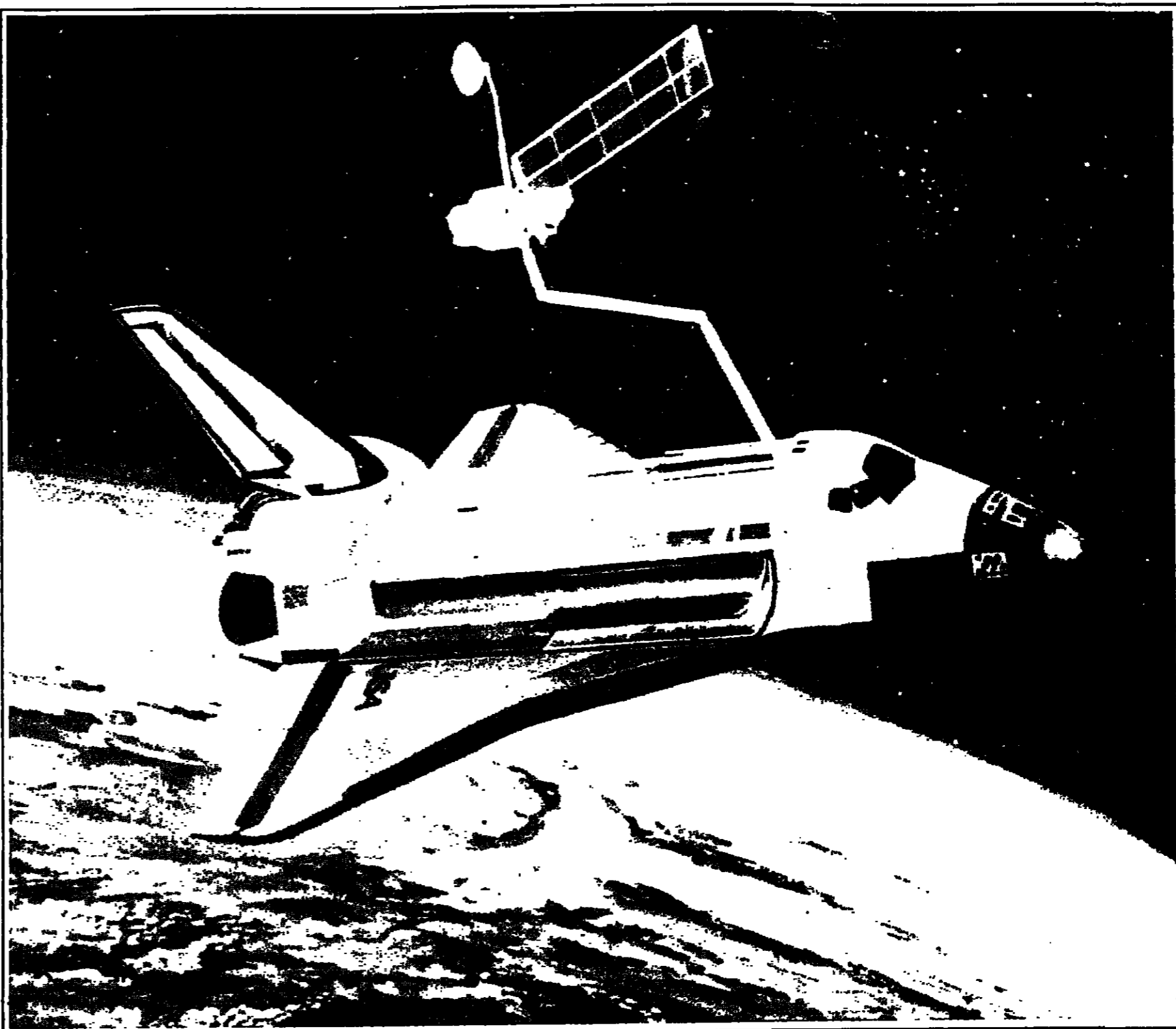
The arm is designed to manipulate a payload as large and heavy as a loaded train boxcar, which weighs about 29,500 kilograms on earth. Once in orbit, such a payload would be weightless, and the only force needed to move the object would be that required to overcome its inertia. It is calculated that a force of 5.4 kilograms is sufficient for this purpose, and that is the force that the arm is designed to exert at its end-point, or hand.

Because of the low level of force required in the design, it has not been possible fully to test the arm, since it cannot lift its own weight of 410 kilograms while on the Earth. Testing of the design, and training for operation of the arm, have been done on computer simulators which themselves are marvels of technology. Using mathematical descriptions of the arm, its form and movements are portrayed on television screens as the operator manipulates controls just as he would using the real arm on the shuttle.

On the major activities during the five-day planned flight of the shuttle—will be to test the Canadarm. While 61 other different activities are scheduled for the flight, the arm is to be operated for a total of 13 hours. U.S. space officials obviously are anxious to see how well this tool, essential in the space transportation system, goes through its paces.

The National Research Council of Canada is responsible for development of the Canadarm, and the principal contractor is Spar Aerospace Limited.

— U.S. ICA



One of the main features of the Canadarm is its capability of retrieving orbiting payloads. The picture shows the manipulation of the arm in the retrieval of a satellite. (NASA)

JORDAN MARKETPLACE

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ECONOMY

Reagan plan to revive U.S. economy

WASHINGTON, Sept. 25 (R) — President Reagan announced plans last night to save \$16 billion in the 1982 financial year in an effort to revive the sluggish U.S. economy, bring down interest rates and curb inflation.

But the initial reaction from Congress suggested that he would have a major battle on his hands to push the programme through. In a televised speech, Mr. Reagan proposed slashing 11 billion dollars from social and other domestic programmes next year while cutting only two billion dollars from defence spending even though the president's fellow Republicans in Congress said the package was in trouble, because the cuts dug too deeply into programmes which directly helped people while leaving the Pentagon's budget virtually unscathed.

"You'll find many Republicans wanting a better balance," said Republican Sen. Robert Dole, who earlier this year helped Mr. Reagan to get an economic reform package of tax and spending cuts through Congress.

The earlier measure, which cut the 1982 budget by \$35 billion, was approved after Mr. Reagan made a similar televised appeal direct to the American public. Viewers peppered congressmen with thousands of telegrams and telephone calls on the president's behalf.

Mr. Reagan proposed last night to save \$8.4 billion by cutting the budgets of virtually all non-defence government bodies and programmes by 12 per cent.

But he bowed to pressure from both Republicans and Democrats and did not cut social security benefits themselves. Instead he proposed to increase government revenues by three billion dollars next year chiefly by closing tax loopholes.

Mr. Reagan said that without the savings of \$16 billion, his administration could not achieve its goal of a balanced budget by 1984.

Critics of the U.S. economic policy have included U.S. allies worried over the effect of U.S. interest rates, now hovering near 20 per cent, upon their currencies and economies.

U.N. report says:

Coal is the answer to future energy needs

GENEVA, Sept. 25 (R) — Coal and fuels derived from it are the best answer to anticipated shortages of oil and natural gas in North America and Western Europe, according to a United Nations report.

In nine years' time demand in the U.S. and Canada for petroleum products and natural gas could exceed supply by 600 million tonnes. In Western Europe the shortfall might be 400 million tonnes, the report said.

The U.N. Economic Commission for Europe, in a report for its coal committee which ended a four-day meeting yesterday, said the only feasible way to make up the deficits was to replace oil and gas with coal or fuels derived from it.

The commission said coal could not replace certain fuels. Petrol and diesel oil would continue to be the only acceptable fuels for transport, natural gas for cooking and heating, and electricity for lighting, domestic appliances and industrial machinery.

But dwindling reserves of oil and gas should be used only when

substitutes were impractical, and the shortfall met by coal-based fuels.

The report said low heat value coal gas could replace natural gas for industrial steam-raising and heating with only a slight loss in efficiency.

Fluidised coal which caused less atmospheric pollution, coal gas with medium heat value and the production of certain chemicals from coal were further possibilities.

If governments decided coal was the answer to their energy needs, production of the solid fuel would need to double by the end of the 1980s, the commission suggested.

Last year hard coal production in North America was 675.8 million tonnes and in Western Europe 268.2 million tonnes.

In Western Europe demand for light petroleum liquids will be 186.1 MTCE greater than supply, 101.8 MTCE for heavy petroleum and 151.1 MTCE for natural gas, according to estimates.

Shuwaya, shuwaya, Schweppes is coming to Egypt

By Margaret Hughes

CAIRO: "Shuwaya Shuwaya Schweppes gayya — Little by little Schweppes is coming." Despite Egyptian inability to pronounce the letter "P", so that the key word becomes Schwebbes, this phrase is on everyone's lips this summer. It is the TV advertising jingle used to launch Schweppes' soft drinks on the Egyptian market.

So quickly has it caught on that it is being picked up in comic strips and newspaper cartoons. The use of alliteration combining the brand name with the much-used phrase in Egypt, "shuwaya, shuwaya," in a £250,000 (\$345,000) TV advertising campaign, has enabled Schweppes to claim 90 per cent brand awareness within weeks of launching its soft drinks here in May.

In a market dominated by cola type drinks, with virtually no brand loyalty — everyone asks for a Coke, but actually drinks any one of a wide range — the establishment of the Schweppes name was vital.

Schweppes has for some years been selling carbonated fruit flavoured soft drinks in countries

such as Bulgaria, Yugoslavia, Spain, Turkey and Israel.

In Egypt it has launched a range of five — three fruit flavours, one lemonade and one cola-type drink. Schweppes says that its range has been specially tailored to this market in that the drinks have a higher sugar content to suit the Egyptian's sweet tooth and a softer taste.

Schweppes and the others are lured by the big potential which a country with a 43 million population, which increases by 100,000 a month, represents. The present market is already worth over £200 million a year at retail prices, and it is estimated that the market could eventually absorb more than twice the current output.

Coca-Cola, which on re-entering the market two years ago predicted a demand of 200 million cases by 1985, has had to modify this in view of what is regarded as a temporary squeeze but still anticipates a demand of between 150 million and 180 million in four years' time.

Schweppes drinks are being produced under a franchise arrangement with the newly-set up El Mohandis Natural Food Products Company. Initially it will just be producing soft drinks but may later also take on other Cadbury Schweppes products as Smash instant mashed potato, Marvel instant milk, tomato juice and paste as well as chocolates.

The biggest shareholder with a 40 per cent stake in this all-Egyptian company is the "pension fund" of the Syndicate of Engineers.

This venture forms part of the syndicate's recent strategy of investing in different sectors such as banking, insurance, hotels (with Sheraton) and trucks (with Daimler Benz) to provide funds for pensions, housing and other forms of social security for its 100,000-odd members.

Schweppes will be the first in Egypt to use locally produced fruit bases and concentrates when a new £4 million plant is opened at Ismailia.

The £25 million plant of El Mohandis Natural Foods has an annual capacity of 17 million cases (408 million bottles), but is cur-

rently only operating at about 75 per cent of capacity. This, says Schweppes, is due only to teething problems but is the main constraint on its sales.

It is variously estimated that Schweppes currently has anything between 2 and 4 per cent of the market. It is aiming at 10 per cent this year and doubling it next year.

This year's target seems a little ambitious given that Schweppes missed the start of the "season" which begins in March, because the plant was a little late in commissioning. Sales in July (the month of Ramadan) will inevitably be down and after the end of September sales tend to drop by 30 to 40 per cent.

But it has certainly made a big initial impact. In part this is due to the advertising campaign prepared by a joint British Egyptian advertising agency, Finnes Perry and Salam.

Apart from the jingle itself, the advertisements are well geared to the Egyptian market and the success of the Schweppes launch is also the result of aggressive marketing.

The retailer, for instance, gets a far better deal selling Schweppes than other brands — 2.6 or 2.75

due to a combination of retailer greed and the general Egyptian reluctance to give small change.

Although this makes Schweppes more attractive to the retailer to stock, in the long run it could prove a major disadvantage. In the past 18 months pricing has become crucial to the market and

the Egyptian market. There are two public sector companies which have lower production costs due to subsidised sugar and lower wages.

Their prices, which are in any case lower, are also controlled by the Government, so that the retailer has to adhere to them. This situation has been made even worse by a recent increase in Government production taxes for a 250cc bottle and over. This went up by 3p to 5.5p and for smaller bottles it doubled to 3p.

This gave the Egyptian Bottling Company, the public sector company which produces Pepsi Cola in a 192cc bottle, an additional advantage over its competitors. Other producers, all of whom either came into or back into the market just before the tax rise, were selling the larger 250cc bottle.

This tax rise doubled their retailing price to 10p and it has since been further raised in two stages to 15p. Meanwhile Pepsi Cola retails at 7p and Coca-Cola, also produced by a public sector

company, retails at 10p in a 250cc bottle.

The tax rise and resulting higher prices caused a 12 per cent drop in demand with sales last year down to 56 million cases from 64 million in 1979, following a period when demand had been increasing at an average of 18 per cent a year. Only some 50 per cent of total plant capacity of around 120 million cases is currently being consumed.

This year demand is expected to show a recovery of between 10 and 15 per cent but mainly due to the number of brands available and the Egyptian inclination to try anything new. But little real growth is anticipated for the next two years or so until the relatively high current prices become masked by inflation.

Producers are also attempting to increase the market by widening the area of distribution currently concentrated on the urban areas. Cairo accounts for 50 per cent of the total.

Financial Times news feature

Make friends with
OLD PARR
Best De Luxe
Scotch Whisky



LONDON EXCHANGE RATES

LONDON, Sept. 25 (R) — Following are the buying and selling rates for leading world currencies and gold against the dollar at the close of trading on the London foreign exchange and bullion markets today.

One sterling	1.7850/70	U.S. dollar	
One U.S. dollar	1.975/78	Canadian dollar	
	2.3185/3215	West German marks	
	2.586/5910	Dutch guilders	
	1.9650/90	Swiss francs	
	38.00/28	Belgian francs	
	5.800/5.900	French francs	
	1176.00/1179.00	Italian lire	
	229.50/70	Japanese yen	
	5.9145/65	Norwegian crowns	
	7.2320/60	Danish crowns	
One ounce of gold	449.50/451.00	U.S. dollars	

LONDON STOCK MARKET

LONDON, Sept. 25 (R) — Renewed selling in an unwinding market caused a slump of 13.9 at 475.2 in the Financial Times 30 share index amid feeble technical rallies, dealers said. They said President Reagan's budget package received a lukewarm reception in Europe and did not help market sentiment. Turnover was moderate, they added.

GECC and Unilever closed 25p and 30p lower respectively among leaders while government bonds eased up to 3/4 point after an irregular trend.

ICI, Beecham, Glaxo, Plessey, Thon EMI and Racal closed with losses of 12p to 19p. Lloyds Bank fell 7p to 364 but falls in other banks did not exceed 5p.

Insurances averaged losses of 2p to 5p but Sun alliance fell 15p to 840p.

Oils moved in line with the general trend with Shell ending 4p off at 326 having traded at a high of 334 and BP finished 8p down at 256.

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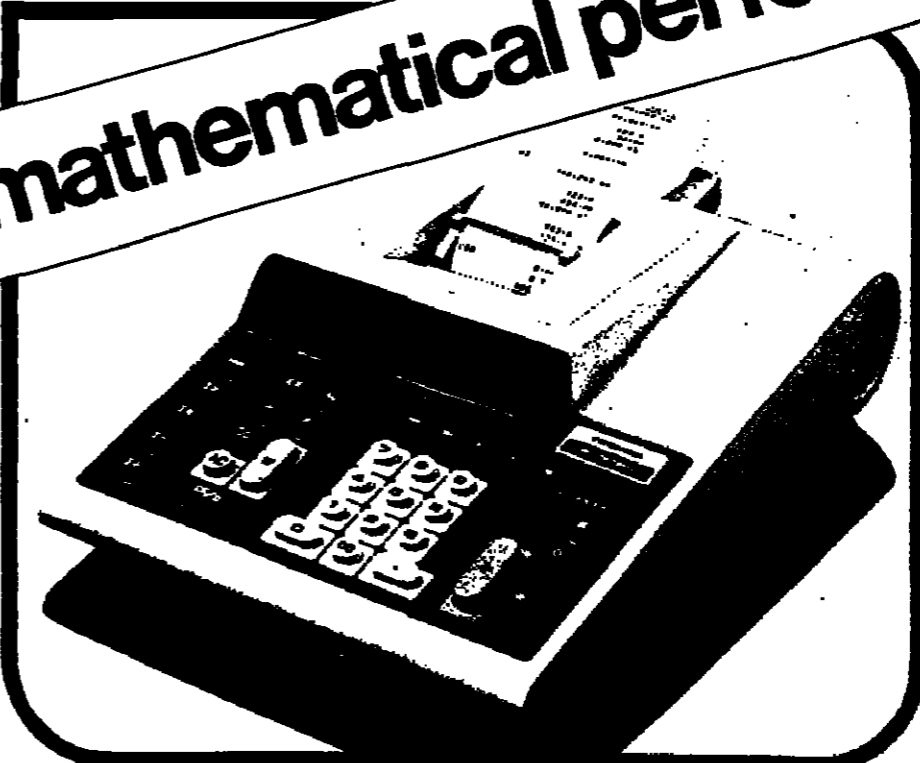
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مكتبة الامم

ing at Olympics Congress

rd Killanin criticises U.S.
ycott of Moscow Olympics

DEN, West Ger-
5 (R)—The increas-
of Olympics has
ports leaders with
views on how to con-
th of the games and
placed on athletes.
day of debate by the
and competitors
Olympic congress
gestions on how to
atism' at the Olym-
fluences of doping
al exploitation, and
rules of eligibility
athletes living in vas-
ocial and economic

aside money earned by their
efforts in trust funds as com-
pensation for interrupting their
studies or working life.
He noted that the IAAF now
proposed to permit athletes to
benefit from their fame through
advertising on commercial prod-
uct endorsements, provided this
was done through their national
sports bodies.
Mr. Holt said this would not
come immediately, but the various
sports bodies wanted the right to
make their own rules. He asked
the International Olympic Com-
mittee (IOC) to accept these
interpretations for Olympic eligi-
bility.
The International Football
Federation, through its Northern
Irish vice-president Harry Cavan,
immediately asked for rules of the
Olympic football tournament to
be changed to make it open to
players under 23 years of age only,
in the hope of enticing back major
footballing countries, like Britain
and Italy.

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of the above mentioned ten-
as been extended by one
upto November 15th 1981.
Mohammad Shahid Ismail
Director General

GOREN BRIDGE

LES H. GOREN
Chicago Tribune
fed a club and forced out the
ace of trumps. After clearing
trumps, declarer would be
able to establish spades at
his leisure.
Unfortunately for
declarer, East made an in-
spired shift to a diamond at
trick two. When the jack of
diamonds was headed by the
queen and ace South had to
reassess the situation. He
was no longer in position to
draw trumps immediately. If
he led a heart, the defender
who won the ace would con-
tinue diamonds, and the fate
of the contract would then
hinge on the spade finesse.
To give himself an ad-
ditional chance for the con-
tract, declarer came to his
hand with the king of clubs
and led a spade to the jack.
East won the king and led
another diamond. Declarer
won the king and now he had
to rely on a 3-3 spade divi-
sion. When both defenders
followed to the ace and queen
of spades, declarer was able
to get rid of his diamond
loser, and the major hurdle
had been safely negotiated.
All that remained was to
handle the rest of the play
with a modicum of care.
Declarer led a low trump
from the table and, when
East played low, the ten won.
A club was ruffed with the
king of trumps and the last
trump was led from dummy.
East won the ace and played
another club, but declarer
carefully ruffed high, drew
the last trump and the con-
tract was home.
Notice that drawing
trumps was the last ace in
declarer's play of the hand,
not the first.

PEANUTS

MOONSTONES COME FROM CEYLON
THEY ARE CUT IN THE SHAPE OF A DOME TO ACCENT THE PLAY OF LIGHT
THEY SAY THIS MAKES THE MOONSTONE LOOK LIKE A RAINDROP SEEN THROUGH THE MIST AT EARLY DAWN
I WOULDN'T KNOW BECAUSE I NEVER GET UP THAT EARLY...

Andy Capp

I'M SURPRISED AT YOU SITTING IN THE SUN. PET, I THOUGHT IT GAVE YOU HEADACHES -
I KNOW, BUT I WANT TO GET A BIT OF A TAN - I THINK IT MAKES A LASS LOOK A LOT MORE ATTRACTIVE
OH, YE-ES! BROWN FINGERS AN' BROWN KNEE-CAPS! THAT SHOULD REALLY DRIVE THE FELLAS WILD

Mutt 'n' Jeff

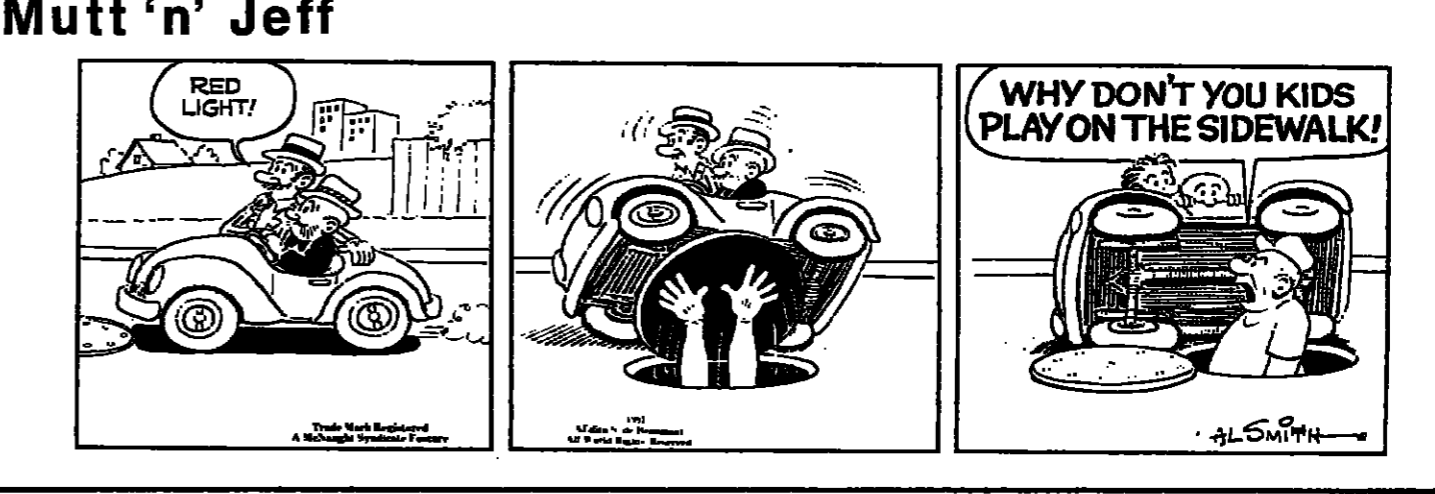
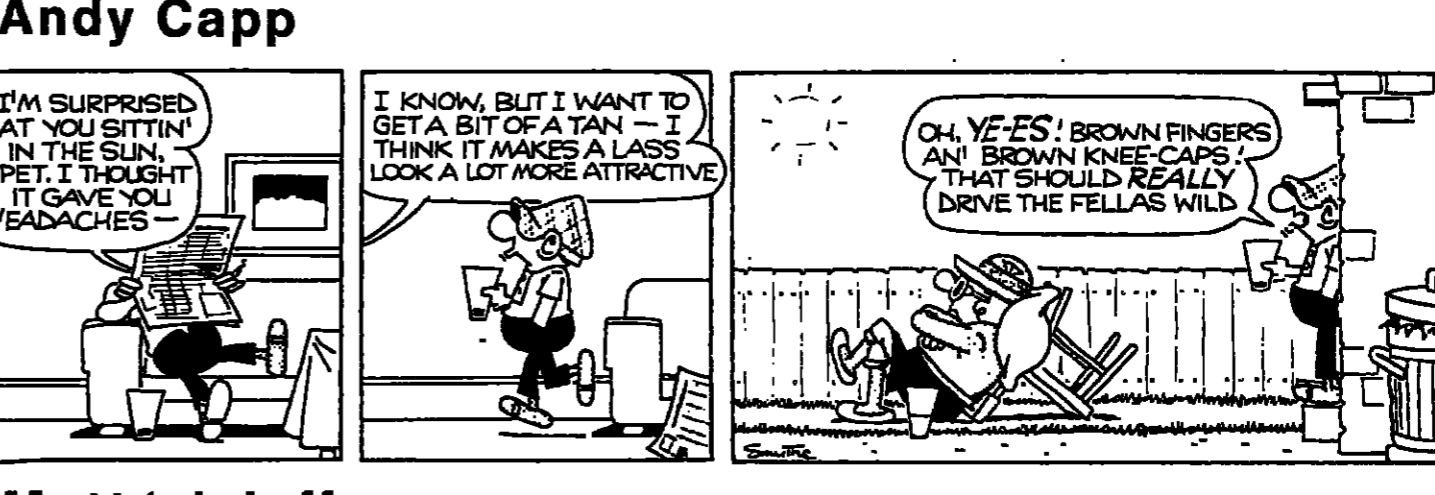
RED LIGHT!
WHY DON'T YOU KIDS PLAY ON THE SIDEWALK!

Czechoslovakia saved by a goal

REYKJAVIK, Sept. 25 (R)— A face-saving goal just 14 minutes from the end earned mighty Czechoslovakia a 1-1 draw with unrated Iceland in their World Soccer Cup European group three qualifying tie here last night.
The Czechoslovaks were heading for an inglorious defeat when the Icelandic defence was prised open for the only time in the match and Kosak netted a simple goal from close in.
Despite this embarrassment, Czechoslovakia head group three on goal difference from Wales with nine points from six games.
But with the Soviet Union thrashing Turkey 4-0 in Moscow to move on to the seven point mark from four matches, the Czechoslovaks and Welsh are now involved in a tense tussle for the second ticket to the finals in Spain next year.
Iceland, who have long since lost interest in the final stages, sent their 10,000 fans into ecstasy by taking a sixth minute lead from a well-worked set-piece.

New Zealand gain a point in Asia-Oceania group opening tie

PEKING, Sept. 25 (R)— New Zealand gained a valuable point away from home when they held China to a 0-0 draw in the opening Asia-Oceania zone World Cup Soccer tie in Peking's Workers' Stadium yesterday.
Watched by a capacity 63,000 crowd and an estimated television audience of 100 million, New Zealand frustrated the Chinese with a mixture of resolute defence and cool, possession football.
China's best chance fell to striker Chen Jingang in the 24th minute but his perfectly-struck shot from the edge of the penalty area was brilliantly turned away by New Zealand goalkeeper Richard Wilson.
Kuwait and Saudi Arabia complete the group from which two nations will qualify for the finals in Spain next summer.



FORECAST FOR SATURDAY, SEPT. 26, 1981
YOUR DAILY Horoscope
from the Carroll Righter Institute
GENERAL TENDENCIES: A day when you will want to be assured by other that you are making gains in your line of endeavor. A good time to engage in favorite hobbies with congenials. Be more optimistic.
ARIES (Mar. 21 to Apr. 19) Take care of chores which you've put off during busy work week. Showing more devotion to loved one is important now.
TAURUS (Apr. 20 to May 20) Spend the daytime with persons you most enjoy and have a delightful time. Study a new outlet that could be profitable later.
GEMINI (May 21 to June 21) Get busy on the phone and improve your image with others. Go to the right sources for the information you need.
MOON CHILDREN (June 22 to July 21) A time to take advantage of new opportunities coming your way. Show others you are a practical person.
LEO (July 22 to Aug. 21) Ideal day to take health treatments and improve your appearance. Try not to be extravagant in the evening.
VIRGO (Aug. 22 to Sept. 22) Study new ways that could give you added income in the future. Allow time to engage in pleasurable activities.
LIBRA (Sept. 23 to Oct. 22) Make your plans for the day's activities and carry through in a positive way. State your ideas and aims to loved one.
SCORPIO (Oct. 23 to Nov. 21) Ideal day to handle civic affairs you have let slide. You are thinking cleverly now and can easily gain your desires.
SAGITTARIUS (Nov. 22 to Dec. 21) Engaging in a new outlet can be interesting and profitable at this time. Make the acquaintance of influential persons.
CAPRICORN (Dec. 22 to Jan. 20) Go to a trusted friend for the advice and information you need. Use only your mature judgment now since your intuition is off.
AQUARIUS (Jan. 21 to Feb. 19) Study career activities and make plans for advancement. Strive for better relationships with family members.
PISCES (Feb. 20 to Mar. 20) Study your surroundings and make needed repairs to your property. Criticizing others is not advised at this time.
IF YOUR CHILD IS BORN TODAY... he or she will be one of those delightful young persons with personal confidence, so be sure to encourage this in order to bring out the fine potentials in this chart. The business field is particularly good and success is assured.
"The Stars impel, they do not compel." What you make of your life is largely up to you!

THE Daily Crossword By Frank Geary
ACROSS
1 Public room
5 Concur
10 Small talk
14 - Minor
15 Wrathful
16 Israeli
17 Days of the knights
20 Fall flower
21 Tennis term
22 Concerning
23 Measures: abbr.
25 Wise guy
26 Used car sign
30 Simian
31 Strangers
32 Enzyme suffix
33 Cafe card
37 Certain indications
40 Amphibian
41 Cavalier base
42 Want
43 Witch
44 - famine (extreme conditions)
45 Alleviate
49 Fathers
50 Fragrance of roses
51 Feel under the weather
52 Slip away to wed
57 "Those were the days!"
60 Rabbit city
61 Wireless
62 Horace or Thomas
63 Danube feeder
64 George of old time
65 English composer
DOWN
1 Laugh tube
2 Sale term
3 Tilt
4 Recent
5 Tune
6 Greeting of wrought iron
7 Ethnic groups
8 "L" - c'est moi!
9 Slimy fish
10 Site of Great Wall
11 "Odyssey" author
12 " - we all?"
13 Savory
18 Callotops
19 Subdue
24 Loser
25 Exceeded the limit
26 Eat nothing
27 Hedgepodge
28 Latvian
29 Dispatch
30 Residue
32 Consumed
33 Hit or -
34 Discharge
35 Emperor of Rome
36 Addict
38 Hazard
39 Certain china
43 Protagonist
44 Military command
45 Shaping machine
46 - Allen
47 Austere
48 Wise men
49 Electron tube
51 Jewish month
53 Kind of bean
54 Khayyam
55 Founding Father
56 Slave of yore
58 Sphere
59 Morse code symbol

THE BETTER HALF By Vinson
Stanley's going to his class reunion? That's one of the few times 'Stanley' and 'class' show up in the same sentence.

JUMBLE THAT SCRAMBLED WORD GAME by Henri Arnold and Bob Lee
Unscramble these four Jumbles, one letter to each square, to form four ordinary words.
DAMAR
GIRRO
CLIPES
RAWTIE
WHAT THEY CALLED THE TWINS WHO WERE BOTH ARTISTS.
Now arrange the circled letters to form the surprise answer, as suggested by the above cartoon.
ANSWER: A... OF... (Answers tomorrow)
Yesterday's Jumbles: IDIOT VAGUE BANTER ANKLET
Answer: Those medicines injected by the doctor didn't work. Apparently they were all this - IN "VEIN"

Vertical text on the left margin: "LATO", "ction", "Five of +", "trumps is a", "ess. Sometimes", "them as soon as", "o prevent the", "from scoring a", "ther times, you", "important work", "hand was worth", "the 10 points it", "in high cards.", "king of clubs was", "used in view of", "call. So when his", "sed hearts, South", "d in continuing on", "it, after winning", "lead with the ace", "utinely continued", "larer would have", "ssy passage. He", "won the king, ruf."

WORLD

Warsaw okays bigger union role at factory decision-making levels

WARSAW, Sept. 25 (A.P.) — In an apparent step back from confrontation the Polish parliament today passed two bills giving workers greater rights in naming factory managers.

The measure dealing with workers' self-management, which represented a compromise between the government and the independent labour union Solidarity, was passed unanimously by the 460-member legislature, the Polish news agency PAP said.

The legislation dealing with state enterprises and worker self-management was the subject of a day-long debate by the parliament after Premier Jaruzelski's warning that Solidarity should moderate its policies at the second congress session tomorrow.

It was by no means clear if the union's 892 delegates would accept the parliament's law, despite its accepting a compromise by the union's national leaders. Some local chapters criticised the compromise as a sell-out of total worker autonomy in making decisions at the shop level.

The decision by Solidarity to offer the compromise, and its acceptance by the Sejm could spark confrontation, however, if the union's congress delegates reject it at the congress.

Armenians surrender after 24-hour siege

PARIS, Sept. 25 (A.P.) — Armenian terrorists who surrendered to the police early today after a 15-hour takeover of the Turkish consulate that left a Turkish security guard dead refused to give any information about themselves during questioning, police said.

No paper or piece of identification was found on the four men ranging in age from 20 to 30 years who seized the consulate last morning, taking about 60 employees and visitors hostage.

Pakistani gunmen kill former minister, wound former judge

LAHORE, Pakistan, Sept. 25 (A.P.) — A high court judge who led the panel which sentenced the late prime minister Zulfikar Ali Bhutto to death was wounded and a prominent politician was killed when unidentified gunmen attacked their car here, a local magistrate said.

Zia-ul-Haq, and the driver. The magistrate, who declined to be identified by name, said the attackers opened fire on the car from a passing vehicle. But an unconfirmed report said they tossed a grenade and then riddled the automobile with bullets.

3 Turks killed in clash

ANKARA, Sept. 25 (R) — Three left-wing guerrillas, one of them under sentence of death, were killed in a clash with security forces in the mountains of eastern Turkey last week, military authorities said today.

The average of 20 deaths a day before the military seized power last September has been reduced to less than two a day, according to officials.

Iraqis fire at Iranian demonstrators in Delhi

NEW DELHI, Sept. 25 (A.P.) — A group of Iraqi nationals fired pistols at a crowd of about 50 Iranians demonstrating near the Iraqi embassy here today and wounded two of them, police said.

The demonstrators then sat down in the street. A blue foreign car with Iraqi diplomatic licence plates suddenly appeared with eight persons in it, a policeman told UNI. He said the occupants shot several times over the heads of the crowd before firing on the Iranians directly.

U.S. Soviet nuclear arms limitation talks low-keyed

UNITED NATIONS, Sept. 25 (R) — The United States and the Soviet Union have agreed to start negotiations on limiting nuclear weapons in Europe but they carefully limited the scope of the talks.

The new missiles would be designed to counter a Soviet build-up of SS-20 missiles facing Western Europe.

Australia inquires into radioactivity leak story

CANBERRA, Sept. 25 (R) — The Australian government is urgently inquiring into allegations of a serious leak of radioactive material into the Pacific Ocean after recent French underground nuclear testing there.

Hunger striker pulls out of fast

BELFAST, Sept. 25 (R) — An Irish Republican prisoner in Belfast's Maze prison came off his hunger strike yesterday after being told he had no more than five days to live.

WORLD NEWS BRIEFS

Solidarity opens New York office

NEW YORK, Sept. 25 (R) — Poland's Solidarity trade union, facing a threat of curbs at home, opened its first overseas office here yesterday in a major step towards building its own international role.

Hunger striker pulls out of fast

BELFAST, Sept. 25 (R) — An Irish Republican prisoner in Belfast's Maze prison came off his hunger strike yesterday after being told he had no more than five days to live.

D.C. 10 galley lifts scrutinised

WASHINGTON, Sept. 25 (R) — A U.S. agency has said that galley lifts on D.C.-10 aircraft should be redesigned, after an accident last week in which a stewardess was crushed to death.

2 U.S. specialists shot in Honduras

WASHINGTON, Sept. 25 (R) — Unidentified attackers have shot and wounded two members of an American military training team assigned to Honduras, the state department said.

Teenage wizards hit the jackpot

SEVENOAKS, England, Sept. 25 (A.P.) — A micro-computer system created by three schoolboys in a garden shed in their spare time should bring them \$1.78 million in the next 12 months, says the company marketing it.

Cubans say U.S. used gas

UNITED NATIONS, Sept. 25 (R) — Cuba has accused United States agents of using biological weapons against its people and said five serious plagues and epidemics had swept the country in less than three years.

Angola -- all the money for weapons, none for fish and chips

By Quentin Peel

LUANDA: South African military action in southern Angola is by no means the MPLA Government's only problem. A combination of factors have brought the once thriving Angolan economy to a state of near-total dislocation.

The young white Angolan conscript who had driven the Land Rover was almost philosophical after the air raid on our convoy was over: "South Africa is surrounded," he said. "There is Mozambique, Zimbabwe, Zambia and Angola. She is like a dog; she bites."

But it is economic realities which dominate everyone's lives. In the port of Luanda, some 50 ships lie at anchor, unable to unload for months on end because of appalling congestion in the docks.

The economic war is a consequence of Angola's colonial heritage: a bitter civil war which coincided with independence from Portugal in 1975, as four rival nationalist movements vied for political power; and the mass exodus of some 500,000 Portuguese, taking with them all their possessions and skills, and leaving behind a heritage of bureaucracy and mass illiteracy.

Angola used to enjoy a per capita income second only to South Africa on the continent. It is a country which boasts a wealth of natural resources, both mineral and agricultural. Above all, it has oil, and it has diamonds.

when production from the three diamond areas in the north-east of Angola had slumped from a pre-independence record of 2.4 million carats to barely 350,000 carats, production has steadily recovered. In 1980, it reached 1.5 million carats, and this year it is expected to be 1.6 million carats.

Africans, and against the Unita guerrillas, has never been specifically revealed. However Lucio Lara, the MPLA party secretary for ideology and, after President dos Santos, the most senior member of the government, said in Portugal recently that defence spending now consumed more than 50 per cent of the state budget.

overcome it, the government has launched a huge literacy campaign and a massive expansion of primary education. But both will take years to make an impact.

for the mass of the population — the health services now available to all, the huge increase in numbers of children at primary schools, and the numbers learning to read and write.

